

ABSTRACT

A non-volatile magnetic memory device is proposed, which provides sufficient magnetic shielding performance for external magnetic fields. A first magnetic shield layer 60a and a second magnetic shield layer 60b, both made of a soft magnetic metal, are formed respectively on the bottom surface of the transistor section 20, which is the mounting side of the MRAM device 10, and on the top surface of the bit line 50, which is opposite to the bottom surface of the mounting side of the MRAM device 10. On the second magnetic shield layer 60a, a passivation film 70 is formed. The magnetic flux penetrated from the external magnetic field, is suppressed below the inversion strength of the MRAM device 10, thereby improving reliability. Moreover, by using soft magnetic metal as the magnetic shield layers 60a, 60b, the magnetic shield layers can be formed by the sputtering technique, particularly composing elements can be partly shared as elements of the targets to be used for forming various layers composing the MRAM device 10 by the sputtering technique, thereby enabling to form various layers of the MRAM device 10 in a single sputtering chamber efficiently.